

In the claims:

Following is a complete set of claims as amended with this Response.

1. (Currently Amended) A method comprising:
applying repeatedly a high power pulse to a plasma chamber ~~from a power supply, wherein a control loop controls the output of the power supply to increase the reaction rate of plasma within the chamber; and~~
applying, between applications of the high power pulses, a low power pulse wherein applying the low power pulse comprises actively detuning a pulsed power generator with respect to the plasma by changing the operating frequency of the power generator beyond the range of an active matching network between the power generator and the plasma.
2. (Original) The method of Claim 1, wherein the low power pulses are applied to allow the temperature of the plasma within the plasma chamber to diminish.
3. (Previously Presented) The method of Claim 1, wherein the high power and low power pulses alternate in spaced time intervals.
4. (Original) The method of Claim 1, wherein applying a high power pulse comprises applying the power at evenly spaced intervals with a constant spacing of time between the intervals.
5. (Canceled)
6. (Original) The method of Claim 1, wherein applying the high power pulse comprises pulsing the coil at a selected alternating current frequency.

7. (Original) The method of Claim 6, wherein the selected frequency is selected based on the conditions of the plasma.
8. (Canceled).
9. (Canceled).
10. (Canceled)
11. (Original) The method of Claim 1, where applying the high and low power pulses comprise applying the high and low power pulses through an air-coupled coil.
12. (Currently Amended) The method of Claim 1, wherein ~~where~~ the high and low power pulses are applied to the plasma through a coil magnetically coupled to the plasma through a magnetic core.
13. (Previously Presented) The method of Claim 1, wherein applying a high power pulse comprises modulating the amplitude of a pulsed power generator.
14. (Currently Amended) An apparatus comprising:
 - a coil to couple power to a plasma in a plasma chamber; and
 - a pulsed power generator coupled to the coil to apply power to the coil; ~~and~~
 - ~~a control loop to control the amplitude of the pulsed power generator to~~repeatedly apply a high power pulse to the coil to increase the reaction rate of the plasma within the chamber, and to apply a low power pulse to the coil between applications of the high power pulses; and
an active matching network between the pulsed power generator and the coil and
wherein the pulsed power generator applies the low power pulse by changing the
operating frequency of the power generator beyond the range of the active matching
network.

15. (Original) The apparatus of Claim 14, wherein the low power pulses allow the temperature of the plasma within the plasma chamber to diminish.

16. (Previously Presented) The apparatus of Claim 14, wherein the high power and low power pulses alternate in spaced time intervals.

17. (Canceled)

18. (Original) The apparatus of Claim 14, wherein the pulsed power generator applies the high power pulse by pulsing the coil at a selected alternating current frequency.

19. (Original) The apparatus of Claim 14, wherein the pulsed power generator applies the low power pulse by actively detuning with respect to the plasma.

20. (Canceled).

21. (Canceled).

22. (Original) The apparatus of Claim 14, wherein the coil comprises an air-coupled coil.

23. (Original) The apparatus of Claim 14, wherein the coil comprises a magnetic core.

24. (Currently Amended) A machine-readable medium having stored thereon data representing instructions which, when executed by a machine, cause the machine to perform operations comprising:

applying repeatedly a high power pulse to a plasma chamber ~~from a power supply, wherein a control loop controls the output of the power supply~~ to increase the reaction rate of plasma within the chamber; ~~and~~

applying, between applications of the high power pulses, a low power pulse; and

changing the operating frequency of a power generator beyond the range of an active matching network that is connected between the power generator and the plasma.

25. (Original) The medium of Claim 24, wherein the instructions for applying a high power pulse comprise instructions which, when executed by the machine, cause the machine to perform further operations comprising applying the power at evenly spaced intervals with a constant spacing of time between the intervals.

26. (Canceled)

27. (Canceled).

28. (Previously Presented) The medium of Claim 24 wherein the instructions for applying a high power pulse comprise instructions which, when executed by the machine, cause the machine to perform further operations comprising modulating the amplitude of a pulsed power generator.

29. (New) The method of Claim 1, further comprising modulating the amplitude of the high power pulse based on the conditions of the plasma.

30. (New) The apparatus of Claim 14, wherein the pulsed power generator modulates the amplitude of the high power pulse based on the conditions of the plasma.

31. (New) The medium of Claim 24, further comprising instructions which, when executed by the machine, cause the machine to perform further operations comprising modulating the amplitude of the high power pulse based on the conditions of the plasma.

32. (New) A method comprising:

applying repeatedly a high power pulse to a plasma chamber to increase the reaction rate of plasma within the chamber; and

applying, between applications of the high power pulses, a low power pulse wherein applying the low power pulse comprises actively detuning a pulsed power generator with respect to the plasma by changing the settings of an active matching network that is coupled between the power generator and the plasma.

33. (New) The method of Claim 32, further comprising modulating the amplitude of the high power pulse based on the conditions of the plasma

34. (New) The method of Claim 32, wherein applying the high power pulse comprises pulsing the coil at a selected alternating current frequency based on the conditions of the plasma.

35. (New) An apparatus comprising:

a coil to couple power to a plasma in a plasma chamber;

a pulsed power generator coupled to the coil to repeatedly apply a high power pulse to the coil to increase the reaction rate of the plasma within the chamber and to apply a low power pulse to the coil between applications of the high power pulses; and

an active matching network between the pulsed power generator and the coil and wherein the pulsed power generator applies the low power pulse by changing the settings of the active matching network.

36. (New) The apparatus of Claim 35, wherein the coil comprises an air-coupled coil.

37. (New) The apparatus of Claim 35, further comprising the coil is magnetically coupled to the plasma through a magnetic core and wherein the high and low power pulses are applied to the plasma through the magnetic core.